

Rechargeable Batteries

CeraCharge™ now available in a small packing unit

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TDK Corporation presents a new packing unit for CeraCharge™, the world's first SMD technology solid-state rechargeable battery, in the compact size EIA 1812 (4.4 x 3.0 x 1.1 mm³). The packing unit (B73180A0101M199) includes 10 blister-packed CeraCharge batteries which come in a vacuum-sealed plastic bag. The components are manufactured in regular series production and are suitable for test purposes, prototype construction and the installation of pilot lines. The packing unit can be obtained quickly and easily from selected TDK service distributors.

CeraCharge can be recharged more than 1,000 times, and has a capacity of 100 µAh at a nominal voltage of 1.5 V. Currents in the range of a few mA can also be rapidly drawn. Thanks to the SMD technology, it is simple to fit the batteries and process them in reflow soldering processes, which in turn, reduces the production costs of the device. CeraCharge is designed for a temperature range of -20 °C to +80 °C.

Unlike most ordinary technologies, CeraCharge is a solid-state rechargeable battery that uses a ceramic solid as electrolyte instead of liquid electrolyte, thus eliminating the risk of fire, explosion or leakage of electrolyte fluid. In a similar way to ceramic capacitors, CeraCharge is based on multilayer technology and combines a relatively high energy density in a very compact space, with process security, when manufacturing multilayer construction components.

To increase capacity and voltage, individual CeraCharge chips can be connected in series and in parallel as required, opening up a very wide spectrum of potential uses – especially in IoT applications. For example, this could include real time clocks, Bluetooth beacons, wearables or energy harvesting.

Main fields of application

- IoT applications; e.g. real time clocks, Bluetooth beacons, energy harvesting

Main features and benefits

- Compact SMD size EIA 1812
- Large temperature range from -20 °C to +80 °C
- Rechargeable more than 1,000 times
- Simple to fit and process with reflow soldering processes
- Multilayer technology, as is also used in MLCCs
- The use of a ceramic solid as an electrolyte also eliminates the risk of fire, explosion or leakage of electrolyte fluid

About TDK Corporation

TDK Corporation is a world leader in electronic solutions for the smart society based in Tokyo, Japan. Built on a foundation of material sciences mastery, TDK welcomes societal transformation by resolutely remaining at the forefront of technological evolution and deliberately “Attracting Tomorrow.” It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK’s comprehensive, innovation-driven portfolio features passive components such as ceramic, aluminum electrolytic and film capacitors, as well as magnetics, high-frequency, and piezo and protection devices. The product spectrum also includes sensors and sensor systems such as temperature and pressure, magnetic, and MEMS sensors. In addition, TDK provides power supplies and energy devices, magnetic heads and more. These products are marketed under the product brands TDK, EPCOS, InvenSense, Micronas, Tronics and TDK-Lambda. TDK focuses on demanding markets in automotive, industrial and consumer electronics, and information and communication technology. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2020, TDK posted total sales of USD 12.5 billion and employed about 107,000 people worldwide.

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